



ENOVIA SmarTeam

SmarTeam Express Configuration Guide V5R19 SP1

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Chapter 1: Introduction

Overview

This document describes how to create and configure a SmarTeam Express database.

It contains the following chapters:

- **Chapter 1, Introduction:** This chapter.
- **[Chapter 2, SmarTeam Express Database Creation:](#)** describes how to create a database for SmarTeam Express using the SmarTeam Data Model Designer.
- **[Chapter 3, Configuration for SmarTeam Express Methodology:](#)** presents the definitions that result from applying SmarTeam Express behavior on a new database.
- **[Chapter 4, Database Configuration for SmarTeam Express:](#)** describes the changes to be made in order to configure SmarTeam to work with the SmarTeam Express database.

Note: Wherever the term "V5R18 SP2 HF1" is mentioned in this document, it also refers to all other Express Hot Fixes in V5R18 SP2.

Internet Site

You are highly recommended to frequently visit our website for the latest updates and plug-in products, including the latest Service Packs, Program Directory (Release Notes), Hotfixes and technical support at <http://support.smarteam.com/>.

In addition, you will also be able to view any installation known issues.

Chapter 2: SmarTeam Express Database Creation

This chapter describes how to create a database for SmarTeam Express using the SmarTeam Data Model Designer.

IMPORTANT! PLMDB is a demo database, and should not be used for production purposes. In order to create a new database for production, use the Data Model Designer as described in this chapter.

Configuration Setting Files for Express Demo Environment

Note: There is a new CD containing SmarTeam Express Demo Environment in the installation procedure. After installing from this CD, the SmarTeam Express Demo Environment is installed on your system, and PLMDB demo data can be seen and updated in SmarTeam - Editor.

All the required files for the configuration are located in the following directory:

<home dir>\Express_R19\SNE\Post Installation

File Name	M/O	Purpose
PLMDB_Domain_config.zip	M	For SDE scenarios (Design Copy, CAD Integrations)
PLMDB_System_config.zip	O	Backup the original file in case you need to restore it for Demo purposes later
PLMDB_user_config.zip	O	Quick Start for users configuration, when running Demo scenarios.

PLMDB_Domain_Config Zip File

Note:

- 1 Open the zip file:

<home dir>\Express_R19\SNE\Post Installation\PLMDB_Domain_config.zip

- 2 Extract two files from the zip file:

smarteam.std.designCopy.config.xml

smarteam.std.legacyPreferences.config.xml

- 3 Verify if these files already exist on the domain level of the configuration settings:
 - If no, copy these files
 - If yes, merge them with the existing files (installed during the installation process)

Note: This zip file can be download from the support site by clicking [here](#).

Copy Scripts

Copy Scripts from the folder SDK\script-Express to the shared folder.

For Server Installation

Data Model Designer (DMD)

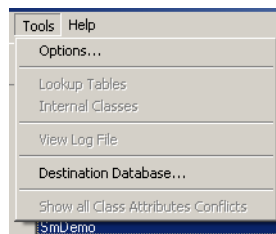
For the SmarTeam Express Server mode, perform the following procedure.

IMPORTANT! Selecting any SmarTeam Express Database Level Behavior (DLB) creates a database and all data required to work with the database, e.g., Profile Cards and the Data Definition modules. You can select any combination of DLBs.

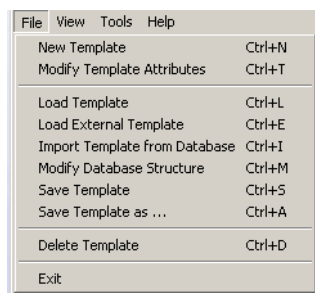
Initial Run of the DMD tool

Note: These restrictions are NOT relevant if you installed the Express Demo Environment.

- 1 Create a new (empty) SQL, Oracle or DB2 database.
- 2 Open the DMD Tools menu, select **Destination Database** and define your destination database.

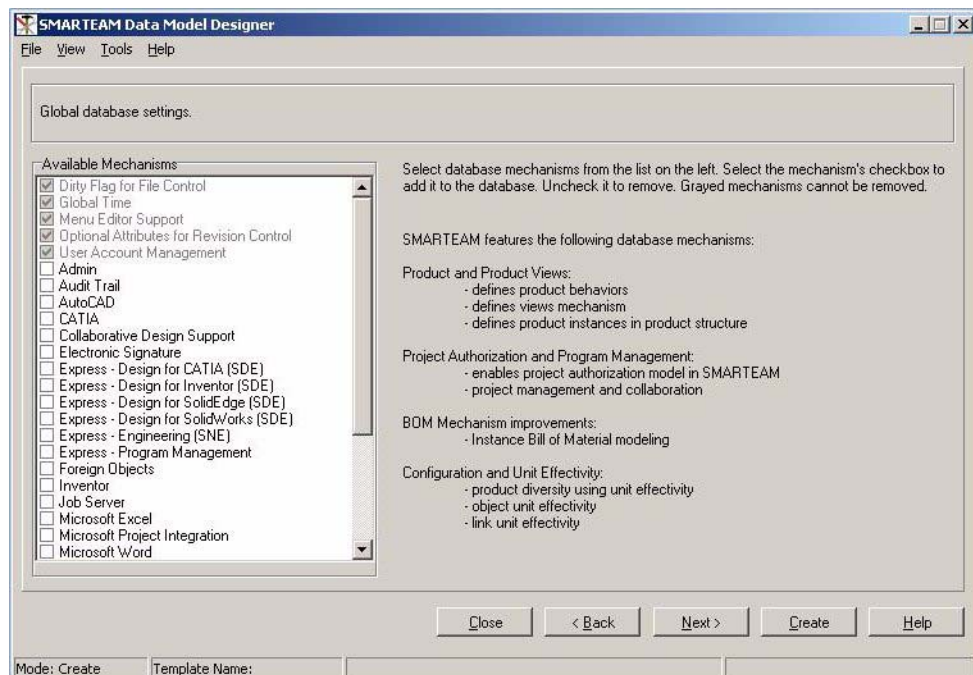


- 3 Click **File, New Template** and create a new database.



- 4 Select the behaviors that you need in the Available Mechanisms pane. You can select any combination of behaviors from this list.

- Express - Design for CATIA (SDE)
- Express - Design for Inventor (SDE)
- Express - Design for SolidEdge (SDE)
- Express - Design for SolidWorks (SDE)
- Express - Engineering (SNE)
- Express - Program Management



- 5 Click **Next**, twice.

- 6 For each super class, define Display Attributes.

Note: Some of these super-classes may not be available, depending on the mechanisms selected.

Super Class Name	Ordered Attribute Name
Users class	FIRST_NAME LAST_NAME LOGIN
Projects class	TDMX_ID TDM_DESCRIPTION
Documents class	TDMX_ID REVISION TDM_DESCRIPTION

Super Class Name	Ordered Attribute Name
Items	TDMX_ID REVISION TDM_DESCRIPTION
Products	TDM_ID TDM_DESCRIPTION TDM_PROD_VIEW_CNTXT
Contacts	TEMX_ID TDMX_COMPANY_NAME TDMX_ADDRESS TDMX_CITY TDMX_COUNTRY
Flow Process	TDM_NAME TDM_DESCRIPTION
Admin	TDM_DESCRIPTION
Manufacturer Items	TDMX_ID TDMX_PRIORITY TDMX_LAST_ORDERED_DATE TDM_DESCRIPTION
Baseline	TDM_BOM_NUMBER TDM_ASSEMBLY_REVISION REVISION STATE PHASE TDM_DESCRIPTION PAR_REVISION UNDER_OPERATION

7 Click Create.

The database is created with the relevant class structure, all related data (e.g., Menus, Profile Cards, Look-ups) is connected to the Server and is ready for work.

Notes:

- Because you obtain the Profile Card from the behaviors automatically, do not use the "Design a Profile Card Form" option in the last stage of the DMD. If you do, the automatic generation of the Profile Card will not occur.
- If you attempt to close the window by clicking Cancel after successfully running the DMD, an error message may appear. It has no impact on the successful DMD operation.

8 Click Close.

Notes: When you run the DMD:

- Do not attempt to remove any of the classes created by the SmarTeam Express installation; this is NOT possible because all classes are created by mechanisms (DLBs).
- Do not modify the definition of existing attributes (those that come with the behaviors selected).

After Database Creation

Configuration According to Selected Behavior

Follow the relevant topics in the table according to the DLB(s) you selected in the DMD and implement the relevant action.

SmarTeam – Design Express (SDE) Without SmarTeam – Engineering Express (SNE)

Open the Form Designer, and update the following classes.

- 1 As the SDE implementation does not include SmarTeam – Workflow, delete the labels Flow Process and Flow Status on the profile cards of the following classes:
 - Document
 - All Design classes



- 2 As the Design configuration attribute is used only for SolidWorks parts/assemblies, if you implement a SDE other than SDE SolidWorks:
 - Delete the label Design configuration on the profile cards of classes:
 - Part
 - Assembly
 - Standard



SmarTeam – Engineering Express (SNE) Without SmarTeam – Design Express (SDE)

Note: The <DB ID> represents the DB ID that is generated after creating the DB.
Example of a PLMDB_R19 ID: 8C62BEEF01A8481BABCD79B4ECD4F0F4

On the SmarTeam server, perform the following:

- 1 Backup the mapping tool XML file:

```
<home dir>\ConfigurationSettings\Data\System\smarteam#$$<DB ID>\smarteam.std.configurationmanagement.config
```

- 2 To obtain the **ConfigurationManagement for SNE Only.zip** file:

- a If you have installed a SmarTeam Express Demo Environment, copy it from:

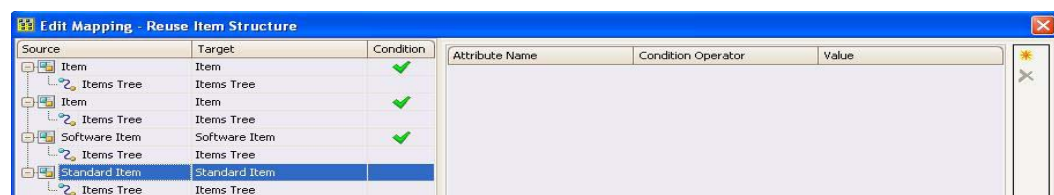
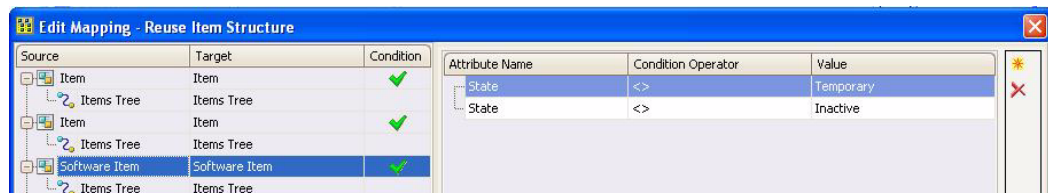
```
<home dir>\Express_R19\SNE\Post Installation
```

- b** Replace this file with the file from the zip file:

```
<home dir>\Express_R19\SNE\Post  
Installation\ConfigurationManagement for SNE Only.zip
```

Copy Tool Mapping Utility Adjustment

After generation of SmarTeam Express implementation database by Data Model Designer (DMD), where one or several Expresses can be selected, it is necessary to check and update the Copy Tool Mapping Utility settings. Adjust the Copy Tool Mapping utility settings according to the Express package you selected for installation. The SmarTeam Express installation defines the whole set of Copy Tool Mappings without differentiating between the various SmarTeam Express packages. In cases where SmarTeam Design Express (SDE) or SmarTeam Engineering Express (SNE) only is selected, the Copy Tool Mapping includes the whole definition set for all Expresses. In this case mapping definitions must be adjusted manually, especially, the mapping conditions for the "Reuse Item Structure" mapping in the SNE. Please verify that the following conditions are defined in this mapping:



In cases where you need to add a SmarTeam – Design Express package to an existing SmarTeam – Engineering Express, it is necessary to restore the updated original mapping XML file with your modifications included.

The backup of the System Configuration is located in the zip file:

```
<home dir>\Express_R19\SNE\Post Installation\PLMDB_System_config.zip
```

Copy NLS for New Database

Perform the following procedure:

- 1 From the the NLS STD folder, move the database definitions to the Custom folder:

From: <home dir>\NLS\en\Custom\Databases\<DB ID>

To: <home dir>\NLS\en\Std\Databases

- 2 Delete sub-folders from the <DB ID> folder.

- 3 Copy the sub-folders from PLMDB folder:

<home dir>\NLS\en\Custom\Databases\8C62BEEF01A8481BABCD79B4ECD4F0F4

Configuring the SmarTeam Server-Client Environment

Creating a Shared Folder

- 1 Create a folder on the server for sharing data.
- 2 Define Share and Security permissions for this folder:
 - Read Permissions for Domain Users
 - Change Permissions for SmarTeam Admin User

Icons and Scripts

The SmarTeam Express Server installation installs icons and scripts but the Client installation does not.

By default, the server configures directly to the <home_dir> folder.

Perform the following procedure:

- 1 Copy Scripts from the folder SDK\script-Express to the shared folder.
- 2 Copy Icons from the folder Icons to the shared folder.
- 3 Open the SmarTeam Configuration Editor, define the Script and Icon Folders keys on the Domain level as a UNC path.



In cases where this procedure cannot be performed as a post installation task, copy the <Icons> and <Script> folders from the SmarTeam server to each client domain machine.

Configuring Quick Report Definitions

Perform the following procedure:

- 1 Move the definition file to the shared folder from:
`<home dir>\LocalConfig\SmartQuickReportPublic.ini`
- 2 Manually configure the Quick Report definitions according to your requirements.
- 3 Open the .ini file and search for the text: `Classes_Id`.
- 4 Replace the value 109 with the new **Items** Class ID.
- 5 Replace the value 92 with the new **Documents** Class ID.

Now you can run the DMD and add classes, attributes, etc., as necessary.

Attaching an Existing Database to SmarTeam

Note: This section is relevant only if you want to attach an existing database to SmarTeam other than PLMDB or the database you created with the DMD after the SmarTeam Express Installation process.

- 1 Copy the <newDB>.mdf file into your SmarTeam DB directory (<SmarTeam>\DB).
- 2 Create a new DB connection through the Database Connection Manager utility - when prompted, assign the <newDB>.mdf file as the Database file.
- 3 Configure the vault server to work with the new DB through the vault server setup utility.
- 4 If you have a new vault folder that you want to use with the new DB, place this folder under the Vault directory and make sure that you configure the Vault Server through the Vault Server Setup utility to work with this folder.
- 5 Configure the Workflow server (if exists) to work with the new DB through the Workflow server setup utility.
- 6 If you have additional icons and scripts that you want to use with the new DB, copy them to the corresponding folder on the server.
- 7 From the NLS folder, copy the database XML files to the corresponding folder on the server:

`<home dir>\NLS\en\Std\Databases\<DB ID>`

`<home dir>\NLS\en\Custom\Databases\<DB ID>`

For Client Installation

Configuring Quick Report Definitions

Perform the following procedure:

- 1 Open the definition file:
 From: `<home dir>\LocalConfig\SmartQuickReport.ini`
- 2 Change the path from the <home dir> to the share folder.

Chapter 3: Configuration for SmarTeam Express Methodology

This chapter provides all the information necessary for configuring SmarTeam for use with a new SmarTeam Express Database in V5R19 or for upgrading from SmarTeam V5R18 SP2 HF1 Express.

- [Accept or Reject Process](#) – Change admin settings
- [Export/Import XML](#) – Change admin settings
- [Purge Specification Links](#) – Change admin settings
- [Upload Documents](#) – Change admin settings
- [Clean Revision Field](#) – Change script
- [Configuration for Web](#)

Note: An Excel file named **Admin_Settings_in_PLMDB_R19-SP1.xls** is attached to this document. The first sheet, **All Admin Settings**, contains a list of all the Admin Settings in the R19 SP1 Express database. The second sheet, **New SetFlowStatus Admin Setting**, contains the Admin Settings for the SetFlowStatus function.

Accept or Reject Process

The mapping of the Lookup Value by the Response Name is fully defined in the Admin Settings without the need for mapping in the script file.

A DLL function called 'ShowFlowStatusByResponseName' is called from the script function 'PLMDB_ShowFlowStatus' and it replaces the DLL function 'ShowFlowStatus' from the previous release.

Note: If you are upgrading from V5R18 SP2 HF1 and want to remain with the script from V5R18 SP2 HF1 but use the new DLL function, you need to make sure that the DLL function 'PLMDB_ShowFlowStatus' is in the new format. You must then define the new Admin Settings.

1 Change the Admin Settings as follows:

Attribute Name	Value	Description
Section	SetFlowStatusByResponse	
Subject	Global_1 \ Global_2 \ ...	The definitions will be applied to all processes
First Value – Fourth Value	<FLOW RESPONSE NAME>;<Lookup Value>	e.g. SEND TO REVIEW;In Review
Section	SetFlowStatusByResponse	
Subject	<Process Name>_1 \ <Process Name>_2 \ ...	The definitions will be applied to the specified process
First Value – Fourth Value	<FLOW RESPONSE NAME>;<Lookup Value>	e.g. INITIATE;Started

Notes:

- a** If the same Flow Response Name is defined for all processes (Global_1) and a specific process and the Lookup Value is different, the system will use the Lookup Value of the specific process.
- b** For a complete list of settings that replaces the settings from R18 SP2 HF1, see the second sheet of the attached Excel file.

Export/Import XML

The Export XML tool exports items and BOM to an XML file that will be imported to the ERP system.

The Import XML tool imports items from the ERP system to SmarTeam. If the item already exists it is updated, and if it does not exist, it is added.

The Admin Settings contain the definitions of the attributes to be exported to the XML file or imported from the XML file. All the settings for attributes are defined in the Long Value field.

IMPORTANT! In SmarTeam Express V5R18 SP2 HF1 the Admin Settings definitions were for "Excluded Attributes", i.e., values that will not be included in the Import/Export operation. In V5R19 SP1 they are for "Included Attributes", the Admin Settings definitions are for "Included Attributes", i.e., values that *will be* included in the Import/Export operation.

Add the Admin Settings as presented in the table below:

Function	Section	Subject	Mandatory
Export	Smart XML_ITEM	IncludedItemAttributes	Yes
Export	Smart XML_BOM	IncludedHeaderAttributes	Yes
Export	Smart XML_BOM	IncludedLineAttributes	Yes
Import	Smart XML_ITEM	IncludedImportItemsAttributes	No
Import	Smart XML_BOM	IncludedImportLineAttributes	No
Import	Smart XML_BOM	IncludedImportHeaderAttributes	No

Notes:

- a** The previous Excluded Attributes Admin Settings can be deleted.
- b** This functionality is available for SmarTeam – Editor Windows-based only. When running from SmarTeam – Editor Web-based, an error message appears.

For more information on these attributes, refer to [Chapter 4, Database Configuration for SmarTeam Express](#).

Purge Specification Links

The links to purge (links of minor revisions only or links to minor revisions and previous major releases) are defined by the administrator in a new Admin Setting. In V5R18 SP2 HF1, the user could define which links to purge.

The administrator should add a new Admin Setting as presented below:

Attribute Name	Value	Description
Section	PurgeSpecificationLinks	
Subject	General	
First Value	True or False	True - Only latest document revision will be linked to the promoted item False - Purge only the minor revisions
Long Value	Item states	Item Mature States – the command will run on items promoted to these states. The list of values should be separated using a semi-colon (e.g. Released; Limited Release)

Note: The script **PLMDB_PurgeSpecificationLinks** should be assigned using Script Maintenance to the hook **After - New Revision** in addition to the hook **After - Promote**.

Upload Documents

A second value has been added to the Upload Documents tool to allow you to define the default class. Update the existing Admin Setting as follows:

Attribute Name	Value	Description
Section	UploadDocuments	
Subject	DefaultFileType	
First Value	<File Type Definition>	Exists from V5R18 SP2 HF1
Second Value	<Default Class Name>	e.g. Document Note: If no value defined the default class will be the first class in the Documents Super Class defined in the database

Clean Revision Field

In the function **Add as Copy** (Hook = After) that appears in the Folder class in the Script Maintenance, change the script as follows:

From: **PLMDB_CleanRevisionField**

To: **Script File = PLMDBatabase.bs, Function Name = "PLMDB_CleanRevisionField_After"**

Configuration for Web

The Administrator should perform the following steps to ensure that the Express functionality will also work from the Web-based client:

- 1 Copy Script file:** Copy the script file **PLMDB_SmarteamWebHooks.wsc** from the SDK folder to your script folder.
- 2 Register Script file:** Right-click on **PLMDB_SmarteamWebHooks.wsc** in your script folder and select **Register**.
- 3 Define Server Hooks/Init Key:** Open the System Configuration Editor and define the System Configuration Key as follows:
 - a** Select **Miscellaneous Configuration, Server Hooks, Init**.
 - b** Click **Add Value**.
 - c** Enter the value **PLMDB_SmarteamWebHooks.WSC**.
 - d** Define the level for this setting (**Domain \ Site \ ...**)
- 4 Create ECR Folders on Web:** For the Engineering Change Request (ECR) process, assign the function **PLMDB_CreateECRFoldersWeb** in the Start Node of the event **On Receive** using the Flowchart Designer.

Note: Currently, although it is possible to connect this function, it does not work in SmarTeam – Web Editor.

Configuring Menus upon Upgrading from V5R18 Express Database

When upgrading from the V5R18 Express database, in order to prevent two different menus appearing (the existing PLMDB menus and the new SmDemo menus), the SmarTeam Express database admin should perform the following steps before upgrading:

- 1** Open the Menu Editor in V5R18.
- 2** Create a new profile named Administrator.
- 3** Add all products to the new profile.
- 4** Copy the content of all products from the System profile to the new profile.
- 5** Delete all the contents from the System and User profiles.

Chapter 4: Database Configuration for SmarTeam Express

This chapter presents the definitions that result from applying SmarTeam Express behavior on a new database. It contains the following topics:

- [Copy Tool](#)
- [Configuration Views](#)
- [Create Items/BOM from Document Tree \(Design-to-Configure\)](#)
- [Workflow Processes](#)
- [Menu Definitions](#)
- [Application Tool Setup](#)
- [Item State in SmarTeam Engineering Express](#)

Copy Tool

In SmarTeam, there are predefined mappings that support the SmarTeam Engineering Express scenarios. These are:

- [Reuse Item Structure: Class and Attribute Mapping](#)
- [Documents to Items: Class and Attribute Mapping](#)
- [Item Structure: Class and Attribute Mapping](#)
- [Create Standard Item: Class and Attribute Mapping](#)
- [BOM from CAD Design: Class and Attribute Mapping](#)

For details on the SmarTeam – Editor Copy Tool, see "Copy Tool" in SmarTeam – Editor Online Help.

Reuse Item Structure: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
Item	Item	Description Item Type Top Item Classification Detailed Description Unit of Measure Service Item Long Lead Item Material Phantom Item	Description Item Type Top Item Classification Detailed Description Unit of Measure Service Item Long Lead Item Material Phantom Item ID (Sequence = Item)	Top Item = Yes
Items Tree	Items Tree	Find Number Operation Sequence Balloon Number Quantity Reference Designator Unit of Measure Find Number	Find Number Operation Sequence Balloon Number Quantity Reference Designator Unit of Measure Find Number Link Creation Source (Default Value = Reuse Item Structure)	
Item	Item	ID	ID	State <> Inactive State <> Temporary Top Item <> Yes
Items Tree	Items Tree	Quantity Balloon Number Link Creation Source Reference Designator Unit of Measure	Quantity Balloon Number Link Creation Source Reference Designator Unit of Measure Link Creation Source (Default Value = Reuse Item Structure)	
Software-Item	Software Item	ID	ID	State <> Inactive State <> Temporary

Class		Attribute		Condition
Items Tree	Items Tree	Balloon Number Operation Sequence Quantity Reference Designator Find Number Unit of Measure	Balloon Number Operation Sequence Quantity Reference Designator Find Number Unit of Measure (Link Creation Source = Reuse Item Structure)	
Standard Item	Standard Item	ID	ID	
Items Tree	Items Tree	Balloon Number Operation Sequence Quantity Reference Designator Find Number Unit of Measure	Balloon Number Operation Sequence Quantity Reference Designator Find Number Unit of Measure (Link Creation Source = Reuse Item Structure)	

Documents to Items: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
		Relational Link: Specification Dependency Link		
Assembly	Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	
Documents	Item	Part Number	ID	
Documents Tree	Items Tree	Quantity	Quantity	
Drawing	Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	
Documents Tree	Items Tree	Quantity Reference Designator Unit of Measure Effective From Effective Until	Quantity Reference Designator Unit of Measure Effective From Effective Until Link Creation Source	
ECAD Package	Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	
Documents Tree	Items Tree	Quantity Unit of Measure Effective From Effective Until	Quantity Unit of Measure Effective From Effective Until Link Creation Source	
Part	Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	
Documents Tree	Items Tree	Quantity Unit of Measure Effective From Effective Until	Quantity Unit of Measure Effective From Effective Until Link Creation Source	
Software Package	Software Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	

Class		Attribute		Condition
Source	Target	Source	Target	
Documents Tree	Items Tree	Quantity Effective From Effective Until	Quantity Effective From Effective Until Link Creation Source	
Standard	Standard Item	Part Number	ID	
		Effective From	Effective From	
		Effective Until	Effective Until	
Documents Tree	Items Tree	Quantity Reference Designator Unit of Measure Effective From Effective Until	Quantity Reference Designator Unit of Measure Effective From Effective Until Link Creation Source	

Item Structure: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
Item	Item	ID	ID	
Items Tree	Items Tree	Quantity Ballon Number Find Number Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure Effective from Effective until	Quantity Ballon Number Find Number Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure Effective from Effective until	
Software Item	Software Item	ID	ID	
Items Tree	Items Tree	Quantity Ballon Number Find Number Effective from Effective until Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure	Quantity Ballon Number Find Number Effective from Effective until Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure	
Standard Item	Standard Item	ID	ID	
Items Tree	Items Tree	Quantity Ballon Number Find Number Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure Effective from Effective until	Quantity Ballon Number Find Number Operational Sequence Reference Designator Unit Effective End Unit Effective Start Unit of Measure Effective from Effective until	

Create Standard Item: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
Temporary Item	Standard Item	Description Material Unit of Measure Detailed description	Description Material Unit of Measure Detailed description Item Type (Sequence = Standard Item) ID (Default Value = Buy)	
Items Tree	Items Tree	Quantity	Quantity	

New Item Structure: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
Item	Item	Classification Description Detailed description Item Type Long Lead Item Material Phantom Item Service Item Top Item Unit of Measure	Classification Description Detailed description Item Type Long Lead Item Material Phantom Item Service Item Top Item Unit of Measure ID (Sequence = Item)	
Items Tree	Items Tree	Ballon Number Find Number Operation Sequence Quantity Reference Designator Unit of Measure	Ballon Number Find Number Operation Sequence Quantity Reference Designator Unit of Measure	
Software Item	Software Item	Cost Description Detailed Description Classification Item Type	Cost Description Detailed Description Classification Item Type ID (Sequence = Software Item)	

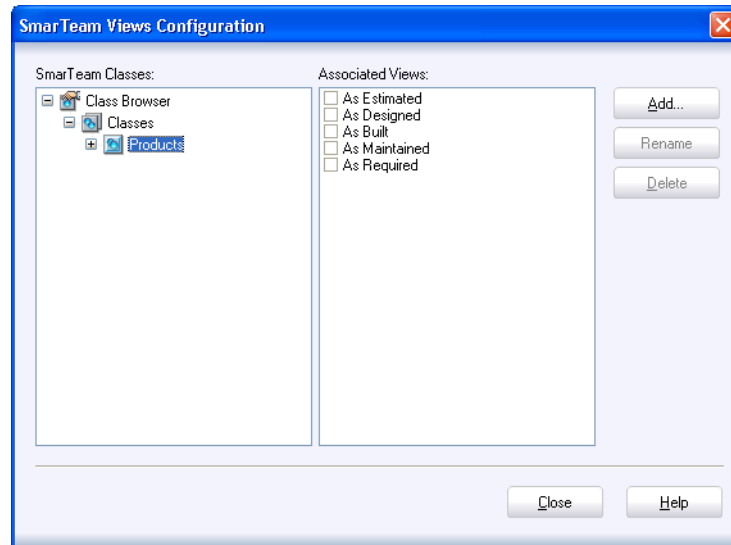
Class		Attribute		Condition
Source	Target	Source	Target	
Items Tree	Items Tree	Ballon Number Quantity Operation Sequence Reference Designator Find Number Unit of Measure	Ballon Number Quantity Operation Sequence Reference Designator Find Number Unit of Measure	
Standard Item	Standard Item	Description Classification Cost Item Type Service Item Unit of Measure	Description Classification Cost Item Type Service Item Unit of Measure ID (Sequence = Standard Item)	
Items Tree	Items Tree	Ballon Number Quantity Operation Sequence Find Number Reference Designator Unit of Measure	Ballon Number Quantity Operation Sequence Find Number Reference Designator Unit of Measure	

BOM from CAD Design: Class and Attribute Mapping

Class		Attribute		Condition
Source	Target	Source	Target	
Assembly	Item (Relational Link = Specification dependency link)	Item Number Effective From Effective Until Description	ID Effective From Effective Until Description	
Documents Tree	Items Tree	Reference Designator Quantity Effective From Effective Until Unit of Measure	Reference Designator Quantity Effective From Effective Until Unit of Measure Link Creation Source (Default Value = BOM from CAD Design)	
Part	Item (Relational Link = Specification dependency link)	Item Number	ID	
Documents Tree	Items Tree	Reference Designator Quantity Unit of Measure	Reference Designator Quantity Unit of Measure Link Creation Source (Default Value = BOM from CAD Design)	
Standard	Standard Item (Relational Link = Specification dependency link)	Item Number Description	ID Description	
Documents Tree	Items Tree	Reference Designator Effective From Effective Until Quantity Unit of Measure	Reference Designator Effective From Effective Until Quantity Unit of Measure Link Creation Source (Default Value = BOM from CAD Design)	

Configuration Views

There is one defined configuration view in the system Manufacturing BOM, but in SmarTeam Engineering Express, the Items Tree is also considered as an Engineering BOM view.



The Item Tree is the default configuration view and it is considered as an Engineering BOM View.

Configuration Views are taken into consideration when performing an Export BOM to XML and Locking BOM Structure operations.

For details on Configuration Views, see "SmarTeam Configuration Views Definition" in SmarTeam – Editor Online Help.

Create Items/BOM from Document Tree (Design-to-Configure)

Design-to-Configure is used in the Express Methodology in order to connect the Design back to the Engineering. For full details on Design-to-Configure, see "Design-to-Configure Automatic BOM Creation from CAD Integration" in SmarTeam – Editor Online Help.

Workflow Processes

This section describes each Workflow process used in conjunction with SmarTeam Engineering Express, and presents flowcharts and node descriptions for each process.

Most of these processes are implemented by the Flowchart Designer. For details, see "Starting the Flowchart Designer" in SmarTeam – Editor Online Help.

User Permissions for a Workflow Process

Update Permission for the Process Profile Card

Only users who have appropriate permissions defined in User Maintenance can update profile cards. Within those users, only node users and administrators are authorized to update the profile card of the process before the process is completed.

This is implemented in the Before Attach object event of the workflow process.

Note: When the workflow process has ended, users cannot update the profile card of the process.

Attach/Detach Objects from/to the Workflow Process

Only the users of the current node or the administrator can attach items/documents to the flow process or detach objects from the flow process.

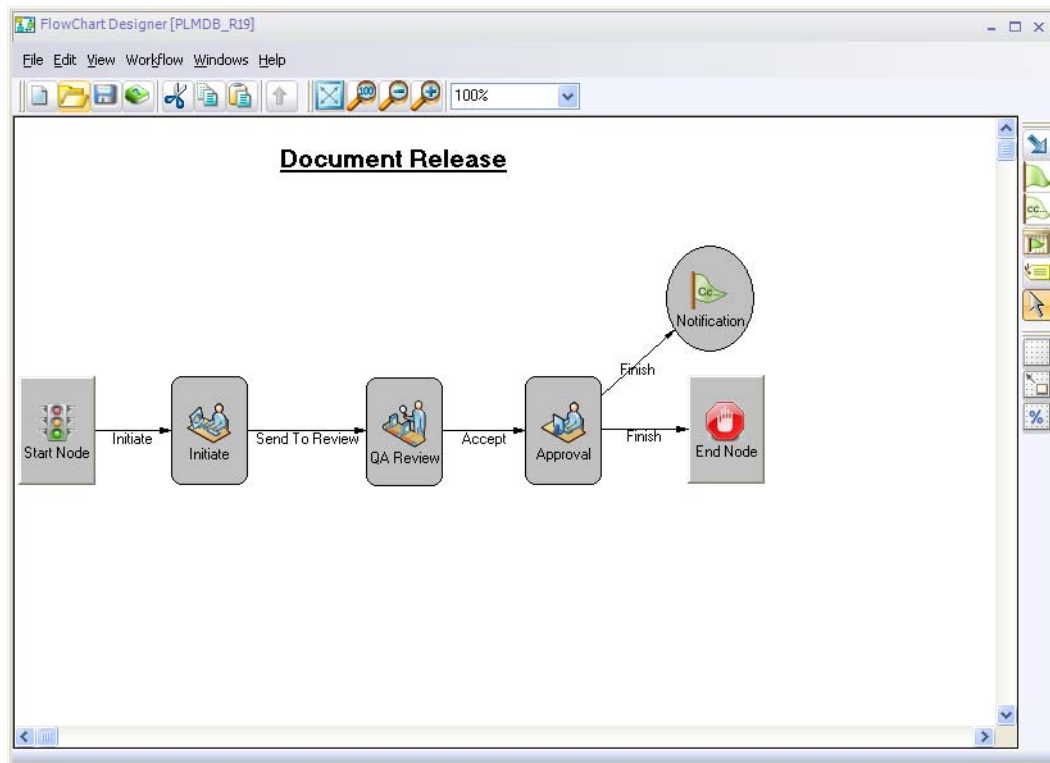
Note: When the workflow process has ended, users cannot attach/detach objects to the process.

Document Release

The Document Release process is used when a new document is created and needs to be approved, for example, New Design Part, New Specification Document.

At the end of this process, the document status is updated to Released.

Document Release Flowchart



Document Release Flowchart Node Description

Node	Assigned Group	Task
Start	Current user	
Initiate	Designer	Initiator for the release Prepare document for release
QA Review	Testing Engineer	Quality
Approval	Lead Designer	Performs a Release lifecycle operation Approves the document
Notification	All reviewers	Notifies all users of the node

Engineering Change Order (ECO)

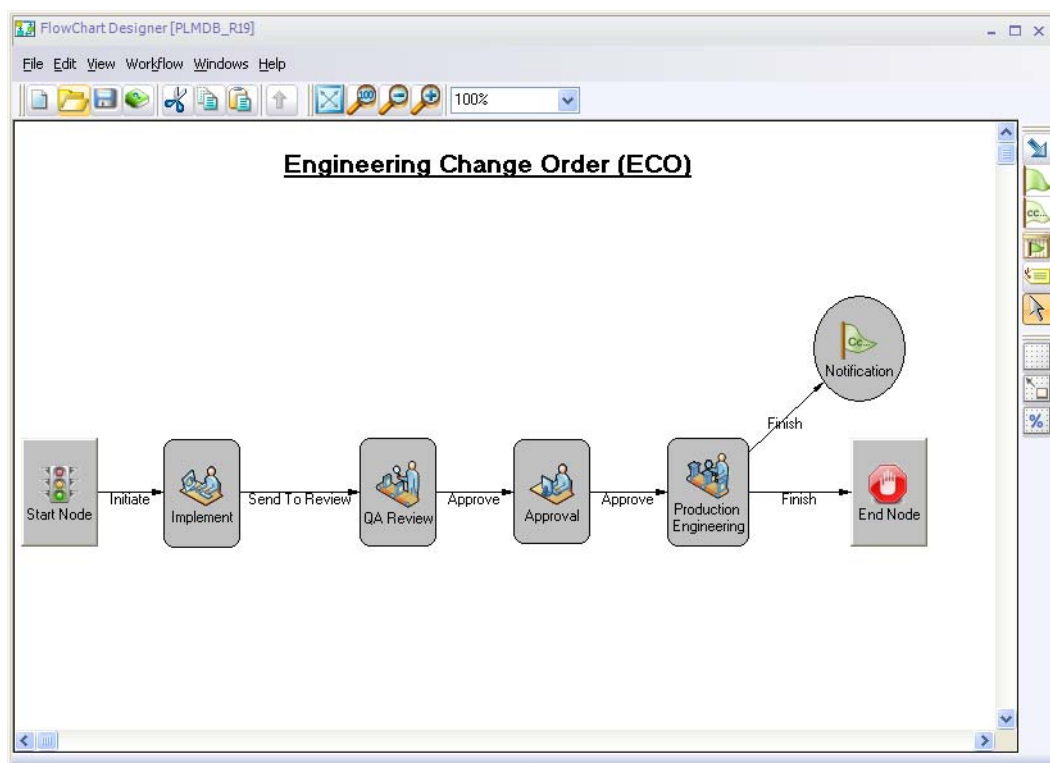
A process that is created after an ECR is approved or when there is a need to modify an item/document without an ECR.

The results of an ECO are:

- the revising of an item/document
- creation of an item/document

Note: A general link is created between the ECO and the ECR if the same item exists in both, and the item in the ECR is located under the folder named **Affected**.

ECO Flowchart



ECO Flowchart Node Description

Node	Assigned Group	Task
Start	Current user	
Implement	Engineer Designer	Implements the change
QA Review	Testing Engineer	Approves quality assurance

Node	Assigned Group	Task
Approval	Lead Engineer, Lead Designer	AUTO promotes to "Release" Lifecycle operation Performs "Release" Lifecycle operation on documents Lead engineer approval / Project manager approval
Production Engineering		Creates M-BOM Promotes to "Production" Lifecycle operation Production Engineer approval Automatically exports BOM as XML for ERP usage hooked in the Before Accept node
Notification	All reviewers	

Engineering Change Request (ECR)

A process that is used by designers and engineers in order to request a change of an existing product/document due to:

- Customer needs
- Market needs
- Internal needs etc.

An ECR may lead to the creation of an ECO, put on hold or rejected according to the decision makers (the Change Control Board).

To perform a change on an object, the user needs to perform the following steps:

- 1 Select the object(s).
- 2 Initiate an ECR process.

The system automatically creates the ECR and runs then the script that is hooked for that class.

Along with the ECR, the system creates three related folders:

- Affected
- Solution
- References

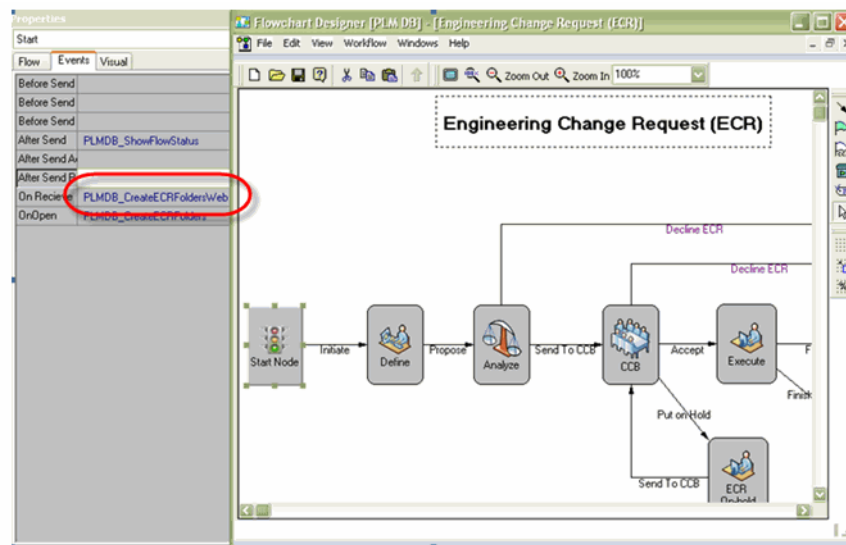
Note: The description of the folder should describe what it contains. For example: "Affected objects in ECR-123". The description should contain the value from the Admin Settings and the folder ID.

The description of each folder is taken from the following Admin Setting values:

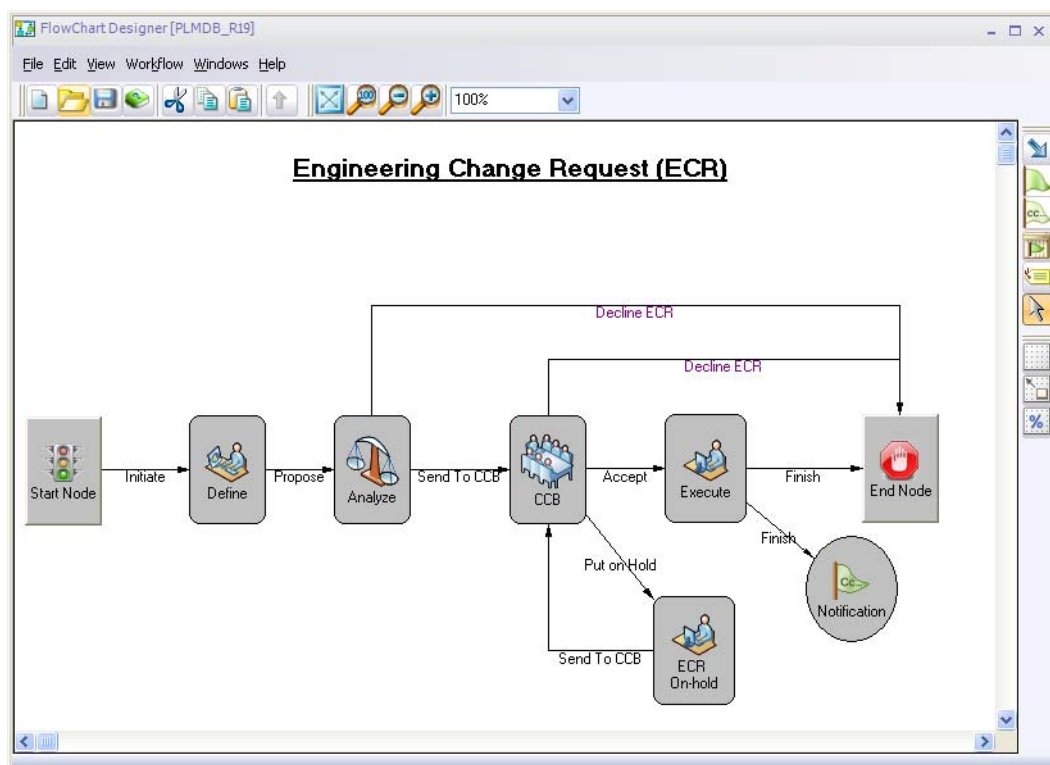
- First value
 - Second value
 - Third value.
- 3 The object(s) that were selected by the user in Step 1 will be added to the process root as general link and as a child of the Attachment folder. If the user links another object(s) to the ECR process by dragging and dropping, or copying/cutting and pasting after the process has been initiated, s/he must manually link these objects to the Affected <ECR_ID> folder.
 - 4 The user performs the required operation on the object(s) in the Affected <ECR_ID> by clicking the right mouse button.

The results of these operations are added to the Solution folder as related objects. The link type is the same standard link allowed between these types of objects in SmarTeam.
 - 5 After approval of the ECR, the user can initiate an ECO on the related object of the ECR and then the ECO will be linked to the ECR. This enables a quick view of the ECR's related ECO.

Note: In order to allow ECR folders to be created in SmarTeam – Web Editor, the script PLMDB_CreateECRFoldersWeb should be assigned to the On Receive event of the Start Node as shown below:



ECR Flowchart



ECR Flowchart Node Description

Node	Assigned Group	Task
Start	Current user	
Define	Engineer	Defines the ECR
Analyze	Lead Engineer	Analyzes/verifies the ECR
CCB	Engineer Lead Engineer Testing Engineer Production Engineer Purchaser Sales Engineer	Approves the ECR
Execute	Lead Engineer	Executes the ECO for the solutions Sends to the relevant Engineer/Design Engineer to implement the change Updates the ERP
ECR On-hold	Lead Engineer	
Notification	All reviewers	

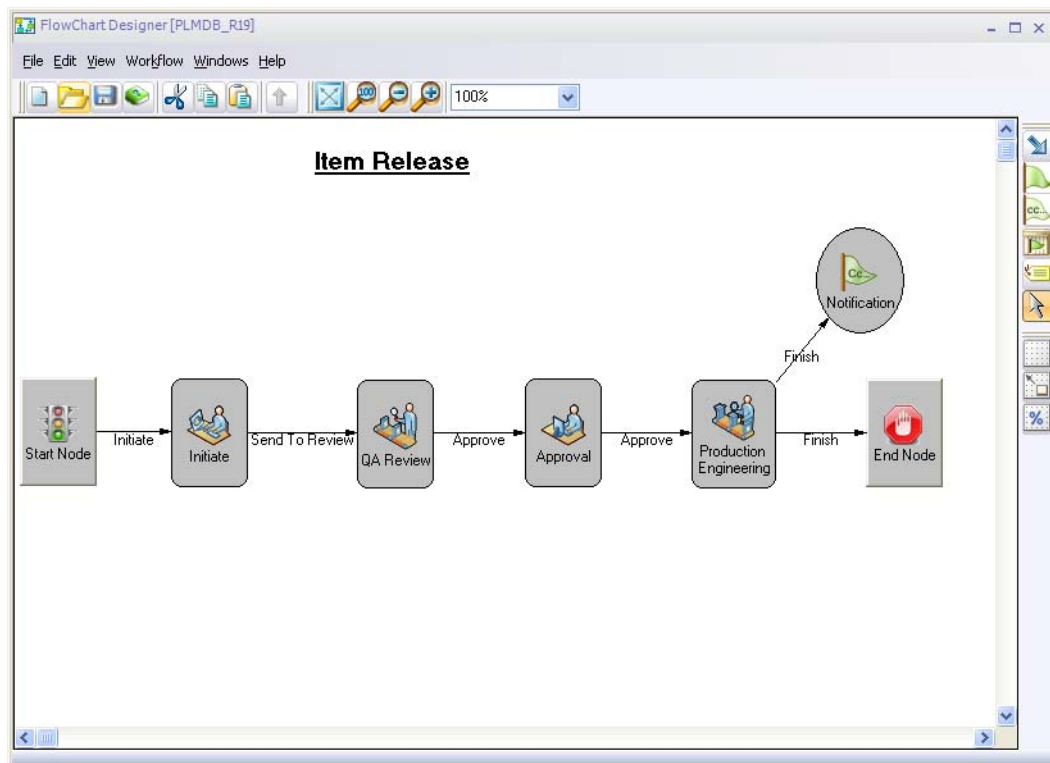
Item Release

The Item Release process is used when a new item or software item is created and needs to be approved, for example, release of the EBOM structure or items imported from an Excel file.

Note that for temporary items and standard items, a different process is used.

At the end of this process, the item state is updated to Released.

Item Release Flowchart



Item Release Flowchart Node Description

Node	Assigned Group	Task
Start	Current user	
Initiate	Engineer Designer	Implements the change
QA Review	Testing Engineer	Approves quality assurance
Approval	Lead Engineer, Lead Designer	Automatically performs "Release" Life-cycle operation on documents Lead engineer approval / Project manager approval
Production Engineering		Creates M-BOM Promotes to "Production" Lifecycle operation Production Engineer approval Automatically exports BOM as XML for ERP usage hooked in the Before Accept node
Notification	All reviewers	

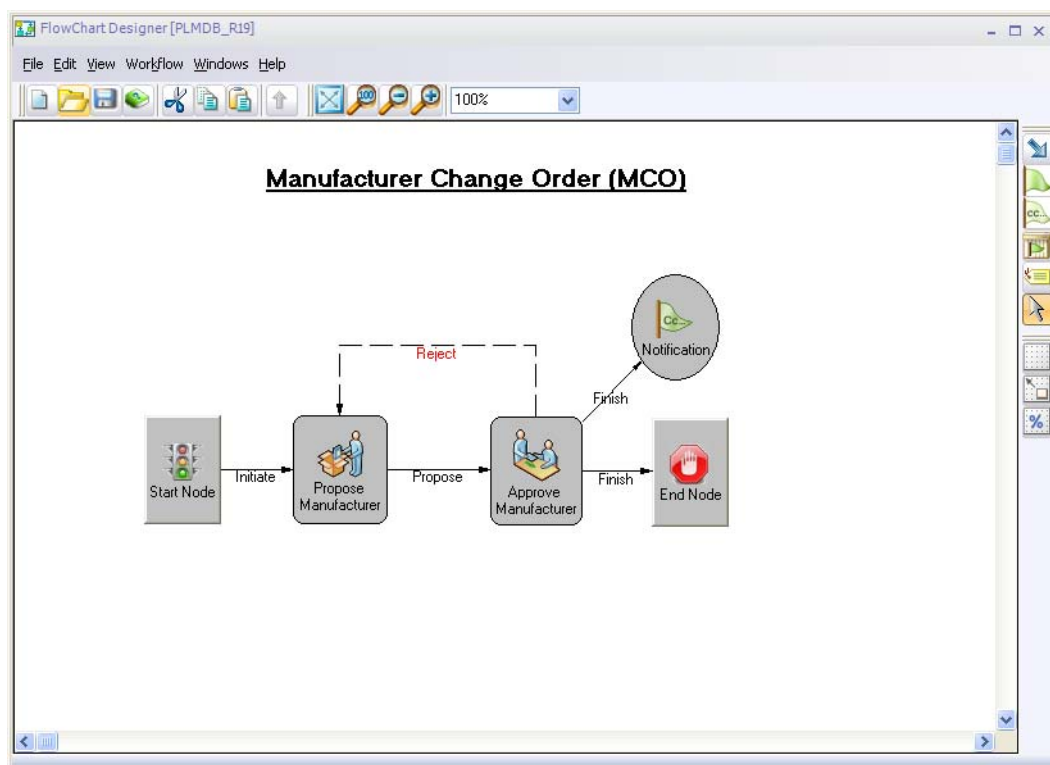
Manufacturing Change Order

The Manufacturing Change Order process is used in order to replace a manufacturer for an item due to one the following reasons:

- The Manufacturer stopped manufacturing the item
- The quality of the manufacturer no longer fits the company's needs
- The customer requests delivery from a specific manufacturer.

As a result of this process, the manufacturer can be made obsolete and a new manufacturer item may be created.

MCO Flowchart



MCO Flowchart Node Description

Node	Assigned Group	Task
Start	Current user	
Propose Manufacturer	Component Engineer	Proposes new manufacturer
Approve Manufacturer	Purchaser	Approves new manufacturer
Notification	All reviewers	Notification

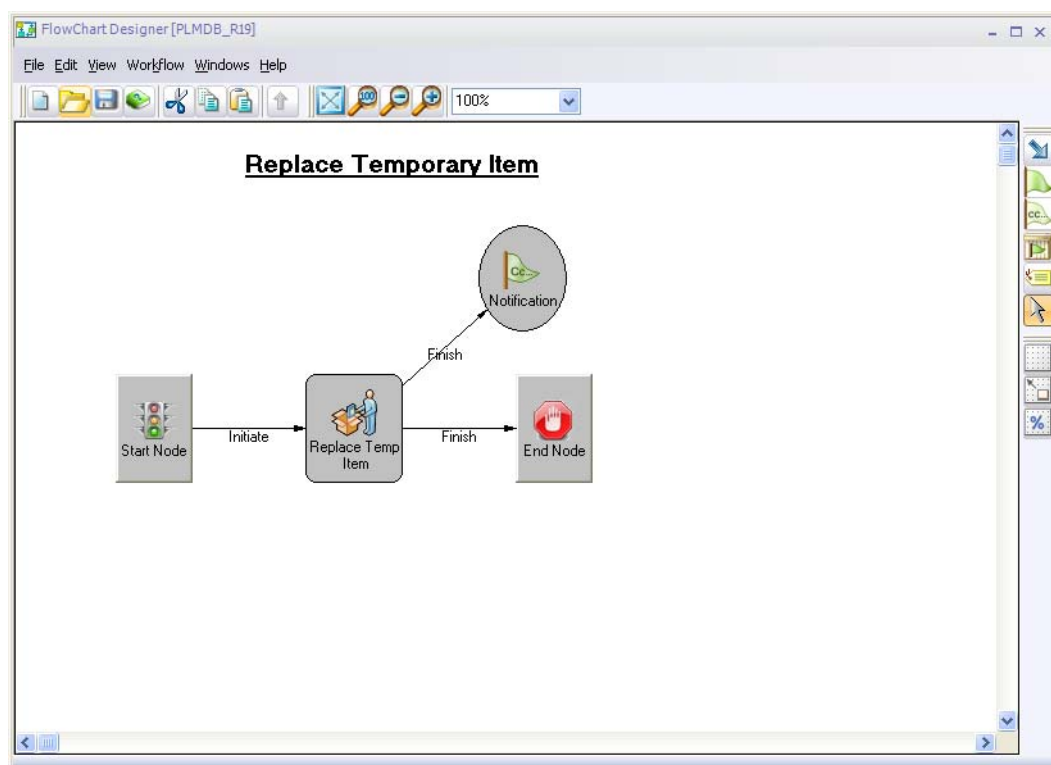
Replace Temporary Item

The Replace Temporary Item process is initiated by the Component Engineer in order to replace a temporary item that has been inserted into the Bill of Material after the true item is available.

The new item is approved and replaces the temporary item in all its instances. Also, all related objects, such as documents, that were attached to the temporary item will be unlinked and attached to the new item.

The temporary item is either made obsolete or deleted from the system. See "Replace Temporary Items in BOM" in SmarTeam – Editor Online Help for the Admin Settings of the Replace Temporary Item process.

Replace Temporary Item Flowchart



Replace Temporary Item Flowchart Node Description

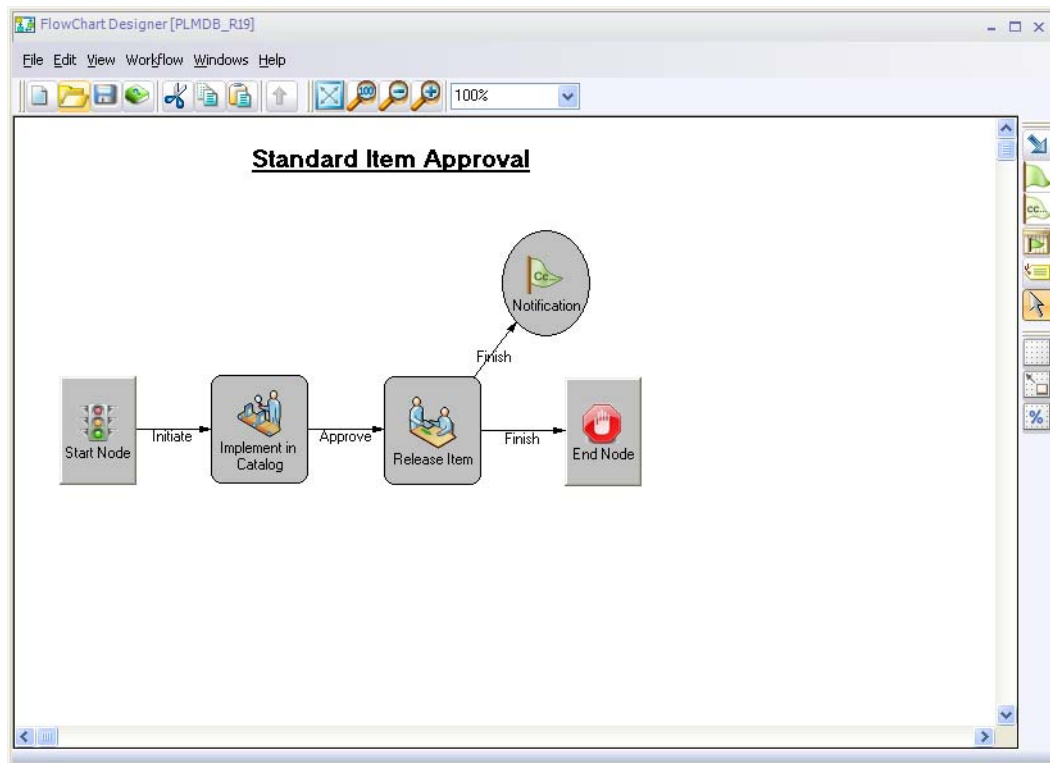
Node	Assigned Group	Task
Start	Current user	
Release Temp item	Lead Engineer; Component Engineer	Searches for the replacement item in order to replace temporary item
Notification	All reviewers	Notification

Standard Item Approval

The Standard Item Approval process is initiated by the Component Engineer in order to approve a standard item in a case where a temporary item has not been created as a standard item.

At the end of the process the standard item is approved and released.

Standard Item Flowchart



Standard Item Nodes Definition

Node	Assigned Group	Task
Start	Component Engineer	
Implement in Catalog	Librarian	
Release item	Component Engineer	Manually releases the item Automatically exports BOM as XML for ERP usage hooked in the Before Accept node
Notification	All reviewers	Notification

Users and Authorizations

SmarTeam – Engineering Express comes with the following predefined groups for implementation.

Note: User Joe is now obsolete. Use the Admin user instead.

Group	Description
Admin	System administrator who holds all authorizations in the system
Designer	Person creating CAD designs, documents and items (Design-to-Configure)
Lead Designer	Person who has advanced capabilities to create new CAD designs and documents
Librarian	Person who is responsible for the standard information in the design department
Navigator	Person who can only (re)view data in the system
Engineer	Person who is responsible for managing product definition, such as items and related designs
Component Engineer	Person who is responsible for definition and approval of new standard items
Testing Engineer	Person who is responsible for verifying the product with regard to specifications and requirements
Lead Engineer	Person who has advanced capabilities to decide on items and modifications
Sales Engineer	Person who is responsible for the early product definition and bidding information
Production Engineer	Person who works on preparing the engineering BOM and completes it for production
Purchaser	Person who is responsible for all items to be purchased in products
Project Manager (PGM)	Not in the scope of SNE
Project Member (PGM)	Not in the scope of SNE
Product Manager	Not in the scope of SNE

Menu Definitions

In SmarTeam Engineering Express, different menus appear when different users are logged in. The menus that appear are defined according to user groups.

The following table presents the menus available in SmarTeam Engineering Express, and shows the names of the groups for whom these menus appear.

Menu Name	Group(s)
Design	Designer Lead Designer Librarian
Engineering	Engineer Component Engineer Testing Engineer Lead Engineer Sales Engineer Production Engineer Purchaser
Navigation	Navigator
Project Manager	Project Manager (PGM)
Project Member	Project Member (PGM)
System	Admin

Application Tool Setup

SmarTeam has been configured with a wide range of file types for working with different applications. For a complete list of all the Application Tool Setup parameters, refer to the SmarTeam Engineering Express Implementation Guide.

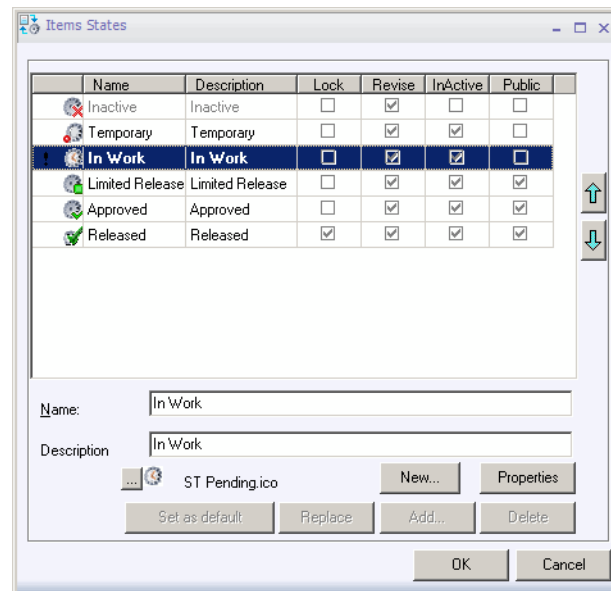
Item State in SmarTeam Engineering Express

Definition

An item may have one of the following states during its lifecycle, according to its maturity level as shown in the Item States window:

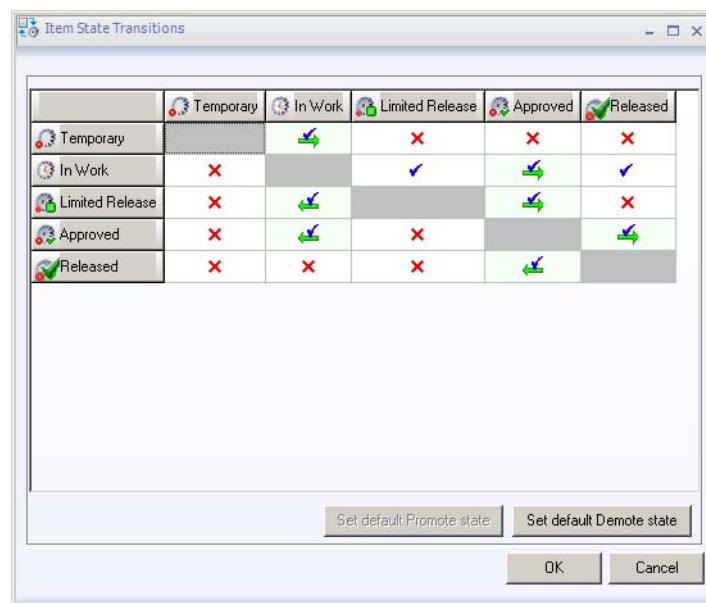
- **Inactive:** A state that the user can demote to from any other state.
- **Temporary:** An optional state for implementation. It defines the early lifecycle of the item. If it is not implemented, the class Temporary Item should be implemented instead.
- **In Work:** An intermediate state representing the Item lifecycle during its development phase. This state is the default state in the SmarTeam Engineering Express implementation.
- **Limited Release:** A state that is used to release an item for purchasing in the ERP system while its parent item has not yet been released. This state indicates that the item may be a long-lead item, and it should be released at a early stage of the parent product development.

- **Approved:** A state that indicates that the item is approved for Production planning, prior to releasing to ERP. This state is generally applied to the Engineering BOM (EBOM). After the EBOM is approved, it can no longer be modified as the MBOM is already created, and it is the only BOM that can be adjusted.
- **Released:** A state that indicates final approval of an item to be released to production in ERP. This state is generally applied to the Manufacturing BOM (MBOM).



Item State Transitions

The following table represents the possible transitions between the different Item States. Note that the Temporary state is not implemented in the implementation shown below:



For details on this window, see "Lifecycle Rules Setup" in SmarTeam – Editor Online Help.

Lifecycle Rules Setup

In SmarTeam, there are specific lifecycle rules defined for each CAD application that works with the PLMDB. Lifecycle Rules Setup determines the behavior of the lifecycle operations.

To view the lifecycle rules, run the SmarTeam Admin Console and select Lifecycle Rules Setup.